# R A K U

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# CHAPTER I

## ORIGIN AND DEVELOPMENT OF RAKU WARE

Raku is Japanese in origin. It has been a part of the culture and philosophy of the country for almost four hundred years. Like much of Japanese ceramics, Raku ware owes its development to the tea ceremony, or Cha-no-yu, as described by the Japanese. Says Kakuzo Okakura in The Book of Tea: "Our pottery would probably never have attained its high quality of excellence if the tea masters had not lent to it their inspiration, the manufacture of the utensils used in the tea ceremony called forth the utmost expenditure of ingenuity on the part of our ceramists."[1]

### I. TEA CEREMONY

Zen Buddhism. "Cha-no-yu is peculiar to Japan. It was originally a monastic custom introduced by Japanese Buddhists who had gone to China for study. These early Buddhists first used tea to prevent drowsiness during long hours of meditation, and later as a ritual in which the practice of a formal gathering in front of the image of Bodhidharma, here tea from a single bowl was drunk."[2] This ritual was the basis for the development of the Japanese tea-ceremony.

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1 Okakura, Kakuzo, The Book of Tea, London, 1932.

2 Yasunosuke Fukukita, Tea Cult of Japan, 1937.

"As far as written evidence is concerned, the earliest record of tea-drinking in Japan dates back to 729 A.D., in which year the Emperor Shomu is said to have invited one-hundred Buddhist monks to take tea in his palace."[3] In those days tea, which was native to southern China, was one of the most precious articles imported from China.

"Around 801 A.D. the first cultivation of the tea plant near the city of Kyoto took place."[4] Seeds were planted in this region by a Japanese monk named Saichi who brought them from China where he studied Buddhism. With the cultivation of the tea plant in Japan, making tea more obtainable, the tea ritual rapidly spread under the influence of Zen Buddhist philosophy to all parts of Japan. By the fifteenth century, the tea ceremony became an independent secular performance. But it was more than a performance; it was the major influence for creating a unique esthetic that subsequently came to permeate Japanese thought and art, and it created a taste and appreciation of ceramics still very much alive today.

Korai Ware. With the increasing interest in ceremonial tea drinking throughout Japan came an even greater increase in the need and demand for tea ceremonial utensils which would reflect the spirit of the ceremony. Sen-no-Rikyu, one of the leading tea masters (1521-1591), founder of the Wabi school of tea cult, discovered this

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[3] Ibid, p. 16.

[4] Ibid, p. 17.

spirit of wabi in the peasant rice bowls of Korean pottery. The word "wabi" ordinarily means lonesome or desolate, but in tea ceremony it is attributed with occult nuances, which, though it is extremely difficult to translate, may be interpreted as simple, plain, placid, serene, unsophisticated, and so on. In the early part of the history of tea ceremony, the bowls most highly regarded were those of the Temmoku (t'ien-mu) ware imported from China, but after Rikyu established the wabi style of tea ceremony, the Temmoku ware was replaced by Korean bowls. These bowls were picked up because of their plainness, from among inexpensive, daily use utensils, for the spirit of wabi was to find beauty in things which were "nothing". The Korean bowls, however, were not intended to meet the spirit of wabi, but was prized because it happened to meet it.

Rikyu and Chojiro. The supply of Korai ware, however, was soon not enough to fill the demand, and so Rikyu and other tea masters began commissioning Japanese potters for additional tea ceremonial ware. It was then that Sen-no-Rikyu discovered the potter Chojiro (1516-1592). Chojiro, the son of a Korean immigrant potter was commissioned by Rikyu to make some tea bowls which would capture the spirit of the wabi. The bowls which Chojiro made were highly received and these bowls, and others like them brought Chojiro the title of master artist. (Figure 1) "The Shogum Hideyoshi placed further honor upon Chojiro, after his death by presenting to his son, Jokei, a golden seal with the inscription "Jurakudai" on it, which was the name of Hideyoshi's gorgeous place where Chojiro had worked."[5] Jokei, who was carrying on with the

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[5] Hugo Munsterberg, The Arts of Japan, Tokyo, 1957.

making of tea-ware in his father's tradition, used the second component in the word inscribed on the seal as a name for the "Ima-yaki", or a new style ware as it was referred to when first made by Chojiro. This word was "Raku", meaning pleasure.

The Raku Tea Bowl. Of all the different types of tea ceremonial ware produced at the time, Raku ware came to be considered the best by Rikyu and other tea masters of Rikyu school of tea cult. They felt that a good tea bowl can only be made by a man who is permeated "to the bone" with the wabi spirit. Chojiro had this spirit as was reflected in his work, and this spirit, along with the processes he employed in the creation of his tea bowls, was passed on from one generation of Raku potters to the next, reaching a high point with Donyu (1599-1656), (Figure 2), and Honami Koëtsu, a student of Donyu (1558-1637), (Figure 3). "In all, fourteen generations of Raku potters carried on with the tradition of making Raku ware, the last one died in 1944."[6]

Raku wares were always made for the tea ceremony, the most common and most admired are the tea bowls. Other types of vessels were also made by Raku potters. These included incense containers, tea jars, water jars, and flower vases. There were traditionally three main types of Raku ware; Black Raku, the most common; Red Raku, and White Raku. The first and most important aspect of Raku ware, however, is the spiritual quality mentioned earlier in this paper. The second

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6 Ibid.

criterion of a good Raku tea ceremony ware is the shape. Most of the early tea bowls were formed by hand without the aid of a wheel or (tebineri), as referred to by the Japanese. Even when a piece had been shaped first on the wheel, its form was altered by hand or spatula, so as to give it a distinctive, sculptural effect. The third quality looked for in Raku ware is the variation in the glazed surface. The vast amount of contrast in color and texture offered by Raku ware delighted the tea masters. The fourth aspect in Raku ware which brought favorable attention to it, was the feeling of the weight and touch. The tea master felt that if a bowl is heavier or lighter than it looks by its size and shape, it is a disappointment, which a good bowl should not give. If it is a good bowl, you will enjoy the feel of it as it rests comfortably in the palms of your hands. Also, when drinking from the bowl, the somewhat heavy rim and soft glaze bring about a pleasant feel when touched by the lips.

These qualities mentioned above were felt by the tea master to be essential in good tea bowls. Although these qualities refer to tea ceremonial bowls, the contemporary potter, no matter what direction he takes, will undoubtedly become involved with these qualities in the development of his own work. It is just such an aesthetic attitude sparked by ancient Raku ware that has brought much vitality to ceramics in recent years. Hal Riegger makes this point very clearly in the following quote: "Raku is more than making ceremonial tea bowls; it is a point of view about pottery and perhaps art. I believe in evolving, that one should explore and discover things about clay, about how to

handle clay, and about fire and to place these into the context of his own being, now. Raku has many subtleties which are readily sensed. Yet one message, freshness of approach, stands out strongly".[7]

This freshness of approach which Hal Riegger refers to is only completely understood when we experience directly the making of Raku. For me, the involvement in Raku processes has brought about a rediscovery of the essential characteristics of the medium. Clay is a highly fluid and malleable material with a life of its own, and through the Raku process, these characteristics are quickly discovered. I personally have found in teaching ceramics that Raku processes expose the student to clay, glaze, and fire in an immediate and direct way.

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[7] Hal Riegger, Raku, Ceramics Monthly, (September, 1965) p. 25.

Figure 1. BLACK RAKU TEA BOWL BY CHOJIRO

Chojiro, who was the son of an immigrant Korean potter, started making a new sort of tea bowl and other tea ceremony wares in the neighborhood of Kyoto some time about 1580. His bowls were sometimes thrown on a wheel but more often pressed by hand and carved and shaped with a flat piece of bamboo. According to legend, he came to the favorable notice of the great tea master Kikyu and through him became known to the Shogun Hideyoshi, who rewarded Chojiro with a seal for use on his wares, inscribed, "raku", which means "pleasure" or "enjoyment".

Chojiro made a number of both black and red Raku tea bowls, and those which survive today are cherished by tea masters as priceless treasures. The bowl illustrated, which is known as "Oguro", is a typical example of his work.

Figure 2. RED RAKU TEA BOWL BY DONYU

Donyu, a potter of the third generation of the Raku line, the grandson of the original Chojiro who is credited with making the first Raku tea bowls. Donyu is recorded as having died in 1656 at the age of fifty-eight (although one account says that he was eighty-five at his death).

Donyu's tea bowls are notable for their precise, thin potting as compared with the cruder wares of his predecessors, and the example shown here is included among the so-called "seven great Donyu tea bowls".

Figure 3. TEA BOWL OF RAKU WARE BY KOETSU, KNOWN AS "FUJI-SAN"

This tea bowl, which is one of the most revered in Japan, and is registered as a National Treasure, is attributed to that great artistic genius, Honami Koetsu (1558-1637), who is said to have learned the art of making Raku ware from Donyu.

The tea bowl, which said to have been named by Koetsu himself after Mount Fuji, "the peerless mountain", has a very unusual glaze tone, whitish-buff on the upper half and dark gray on the lower half.

## CHAPTER II

## TECHNIQUES, MATERIALS, AND TOOLS

Traditional Japanese practice in the making of raku differs somewhat from the approach taken by most American potters in recent years. In many instances the finished raku ware produced by the contemporary potter relates to its traditional Japanese counterpart in the softness of its glaze and the porousness of the body only. In the past, the Japanese limited raku to the production of ceremonial tea bowls; but the Western contemporary potter has, for the most part, placed no such limitation on the process of Raku. Their approach has been largely one of exploration and exploitation of the Japanese processes in search for individually expressive form.

Before going into a description of some of the methods I've employed in the processing of raku ware, I should explain briefly the traditional Japanese techniques for making raku ware.

### I. CLAYS

The Japanese generally used a buff-colored fire clay which was very gritty in texture. Their tea bowls were for the most part, formed by hand and follow two basic shapes: The winter bowl - a tall and narrow shape, and the summer bowl - a shallower and wider bowl. The drying and bisque fire are the same as for any greenware; the bisque temperature in the area of cone 08 to 06. After the bisque fire, the tea bowls were given a wash of ochre slip over the entire surface only,

omitting the foot ring. The ochre wash bowls were then fired to about 1200 degrees F. in a long narrow fireclay box into which some burning charcoal had been placed. The bowls are placed directly on top of the burning charcoal in a row, and more charcoal is placed around and over the bowls. After several minutes carbon from the burning charcoal impregnates the ochre slip in a random pattern of gray-black spots. Quenching the hot bowls in water retains these spots. The bowls are then allowed to dry before applying glaze to them. The glaze was applied either by brushing or dipping with the glaze being quite thick in consistency. The kiln was preheated during the glaze application and the raw pieces were placed on top of the heated kiln to remove any moisture. When the kiln reached a bright red heat, around 1500 degrees F., a bowl is lifted with the iron tongs and placed into the kiln. The bowl was removed when the glaze appears wet and shiny through the spy hole by picking it out with the iron tongs and left to cool. This then is the Japanese process of making raku tea bowls which was standard practice handed on from one generation of Raku potters to the next.

Currently, American potters across the country are becoming actively involved with raku and many new and different approaches are being developed by the many potters involved. I will not attempt to give a complete coverage of all the many new approaches in the process of raku ware, for they are too many and varied; but, instead, will attempt to describe and explain the method I have employed during the past three years since my first introduction to raku while attending

the ceramics workshop conducted by Angelo Garzio, summer 1965, at U. M. D.

Raku Clay Body. Practically any clay can be successfully used; there are no set rules about the composition of clay for raku. Two qualities, however, must be considered in preparing the raku clay body for successful glaze firing. The clay should consist of at least 25 per cent grog of a heavy mesh size. The rough, groggy clay is more porous and therefore will withstand the heat shocks of a rapid temperature increase and decrease. The rough clay will also provide a surface on the ware which will bring about a better union between glaze and clay surface. This is necessary since glaze firing is neither high enough nor long enough to allow the glaze to penetrate the clay surface. Clays which will be under-fired at raku temperatures are more satisfactory to use because of the greater porousness which they provide. These two qualities are about the only requirements for raku clay bodies, and the rest is entirely a personal matter in selection of raku clay as far as color, texture, and working properties are concerned. My favorite raku body for those interested consists of the following material:

A. P. Green Fireclay . . . . . 65
Kentucky Ball Clay . . . . . 10
Grog . . . . . 25

## II. FORMING METHODS

Hand-built and Wheel Thrown. The Japanese traditionally preferred to use the hand-built method. I have found myself, after throwing with raku body, relying more on the hand-built method also, not

just for aesthetic reasons, but for the practical purpose of saving the flesh on my hands. Technically and aesthetically, the wheel thrown forms can be just as effective and again, as in the selection of a clay, it is a personal matter as far as forming methods are concerned. One factor must be considered in the construction of raku forms. Due to the severe heat shocks the ware will be subjected to, joints in a piece must be unusually well made. Shallow thrown bowl forms will generally crack at the rim unless during the throwing, the rim is increased in thickness, at least twice the thickness of the wall. Size is somewhat of a problem; however, I've managed to manipulate in and out of a red-hot top loading gas kiln with tongs, pieces as tall as twenty five inches. The height is not any real problem; it is the weight of the pieces which causes the trouble.

## III. DRYING AND BISQUE FIRING

Drying raku greenware presents no special problems outside of the normal drying cycle of other types of greenware. Due to the coarse, porous body, raku greenware dries extremely well with practically no warpage because of the small amount of shrinkage in the grog-bearing clay. It is entirely possible to throw raku forms in the morning and trim and fit handles, spouts, and lids in the afternoon of the same day, and the following day, run off a bisque fire of the previous days work.

Bisque fire is essential before glaze firing can be carried on successfully, for the presence of any moisture in the ware will be disastrous if placed into a red-hot kiln. Generally cone 08 to 06 will

produce adequate hardness in the bisque ware to allow for handling during glaze application and glaze fire loading. One of the major drawbacks with raku ware felt by many potters is the porous, fragile, finished form one ends up with because of the low temperature of both bisque and glaze fire. I have found, however, that a much higher bisque fire temperature will bring greater density to the ware. There is, however, a limit to the bisque temperature raku ware can be fired to. I have found, using the clay body mentioned earlier which contains 65 per cent fireclay, that a bisque temperature of cone 2 can be obtained and still the body will be porous enough to safely undergo the extreme shock of sudden red-hot temperature in the glaze fire. This high fire bisque is not possible with all clay bodies being used for raku. Bodies containing high percentages of earthenware will become too vitrified above cone 04, and will crack in the glaze fire when they are removed to cool if bisqued too high.

## IV. GLAZE

Generally, the traditional raku glazes were compounded to mature at temperatures in the neighborhood of 1500 to 1700 degrees F. Some potters today are working at higher temperatures with raku, in the area of 1800 to 1900 degrees F. Cones are not used in the glaze firing; but instead the potter observes the progress of the glaze melting on the pot through the spy hole in the kiln. This is one aspect in working with raku which allows for much individuality in the firing of the glazed

ware. The same glaze can be fired on different pieces at different temperatures, which in turn provide for greater variety in color and texture. However, the temperature difference cannot be too great and must be watched carefully to insure the glaze from over-firing.

Glaze Composition. The following glaze formulas I have used extensively for the past few years, and I have been very satisfied with the effects they provide:

Base 1 Cone 08-04

| | |
|---|---|
| Feldspar Potash | 115 |
| Barium Carbonate | 32 |
| Zinc Oxide | 13 |
| Colemanite | 99 |
| Flint | 39 |
| Bentonite | 2 |

This base, with the addition of 10 per cent Ziropax, produces a very elegant marble-like white, opaque, glaze and provides an excellent background for overglaze or stain decoration. It matures at cone 08 and can be fired as high as cone 04.

Base 2 Cone 08-04

| | |
|---|---|
| Red Lead | 35 |
| Zinc Oxide | 1 |
| Volcanic Ash | 52 |
| Whiting | 8 |
| Kaolin Clay | 4 |

A bright, semi-transparent glaze which will produce an excellent yellow color with the addition of 5 per cent Ziropax and 5 per cent Tin-Vanadium stain.

Base 3 Cone 08-04

| | |
|---|---|
| Colemanite | 150 |
| Feldspar Potash | 40 |
| Red Lead | 5 |
| Bentonite | 5 |

This glaze is completely transparent and will show englobe patterns along with other decorative technique applied under the glaze surface.

Base 4 Cone 08-04

| | |
|---|---|
| Colemanite | 120 |
| Flint | 40 |
| Kaolin | 80 |
| Bentonite | 42 |

A semi-mat glaze which when applied heavily will produce somewhat of a frost-like surface. This glaze is extremely easy to apply due to the large percentage of clay.

## V. THE GLAZE FIRE

Loading the raku kiln. The raku glaze fire is, in my opinion, one of the most intensely involved experiences a potter can have. It begins by placing as many bisque pieces which have been glazed, as possible into the cold kiln; other glazed pieces are placed on top and around the kiln to heat and remove any moisture which may be present from the glaze application. The kiln is turned on full, and, depending on the type and size of kiln, the time necessary to reach the maturing temperature of the glaze is from 2 to 4 hours. (Figure 4). It is very important that every pot which is to be placed into the kiln after the first load be completely dry. Any moisture in the piece will cause it

to burst when placed in the red-hot kiln. I always glaze raku ware a day or so before I intend to fire; this allows enough time for the raw, glazed piece to dry.

When the glaze on the pots inside the kiln appear wet and shiny, the pieces are removed with the aid of iron tongs. (Figure 5). Other pieces are then placed into the kiln immediately. From this point on, the firing time becomes much shorter because you are placing the pieces in a kiln which is only a few hundred degrees below the maturing temperature of your glaze. To regain the heat which is lost when removing the previous load takes, depending on size and style of kiln, from 15 to 30 minutes or more. A too rapid increase in temperature often causes blistering and crawling of the glaze or uneven melting of the glaze. If the glaze on the bottom of the pot is not completely fused, and the upper rim of the pieces is smooth and glossy, then the temperature increase is too rapid and an adjustment must be made. I've found that at least 30 minutes of firing is needed to mature evenly most raku glazes.

Reduction Process. As the pieces are removed from the kiln a reduction of the clay and glaze can be achieved by immediately placing the glowing, glistening pot into a metal container of some combustible material (Figure 6). A reducing of the oxygen in both glaze and clay takes place by the burning of the material which is ignited by the red-hot pot.

The effects of the reduction upon the colorants used in the glaze and the metal oxides used in decorative stains brushed over or under the glaze are very exciting and quite varied with each piece. No two pieces will be alike even though they are glazed with the same glaze. This is

due to several factors in the reduction process. For example, a copper oxide stain brushed over two pots with the same glazes can range in color after the reduction from copper penny color to intense fluorescent red. This great variance is due to conditions such as the type of combustible material used. Dry leaves will produce one effect, wood saw dust another. Even the type of leaf used, such as oak leaves, will make a glaze or stain differ from the same glaze or stain reduced in some other type of leaves like elm. The temperature of the pot when placed into the container of combustible material will have an effect on color and texture also. Some potters like to count to a certain number before placing the pot in the container. This allows the glaze to solidify and to keep the glaze from becoming marred by the material it will be dropped into. I prefer placing immediately, the pot into the reduction container while the glaze surface is still viscous. The reason for doing this is for added decorative effects, resulting from the fossil-like patterns created by the reduction material's impression on the viscous glaze. Some of the best results I have obtained by the use of straw or dry grass. These two materials will impress in the glaze surface an intricate pattern with a delicate sublety.

Generally the pot is then removed and placed to cool on fireproof material. If a more rapid cooling of the pot is desired, the piece can be quenched in cold water. This process is not advisable for all shapes; enclosed forms, such as bottles will burst because the water does not circulate inside the bottle, therefore, the inside re-

mains quite hot while the outside is cooled by a large mass of water surrounding the pot. These uneven contractions will cause the bottle form to crack. More open bowl and vase forms give no such problems.

After the pot is cool enough to handle, it is given a scrubbing with common household cleanser to remove the carbon deposits on the glaze left from the reduction. Again, how much scrubbing away of the carbon residue depends on the individual potter. Many potters do not bother at all with this final treatment, but rather feel that carbon deposits add to the total aesthetic effect of the raku form.

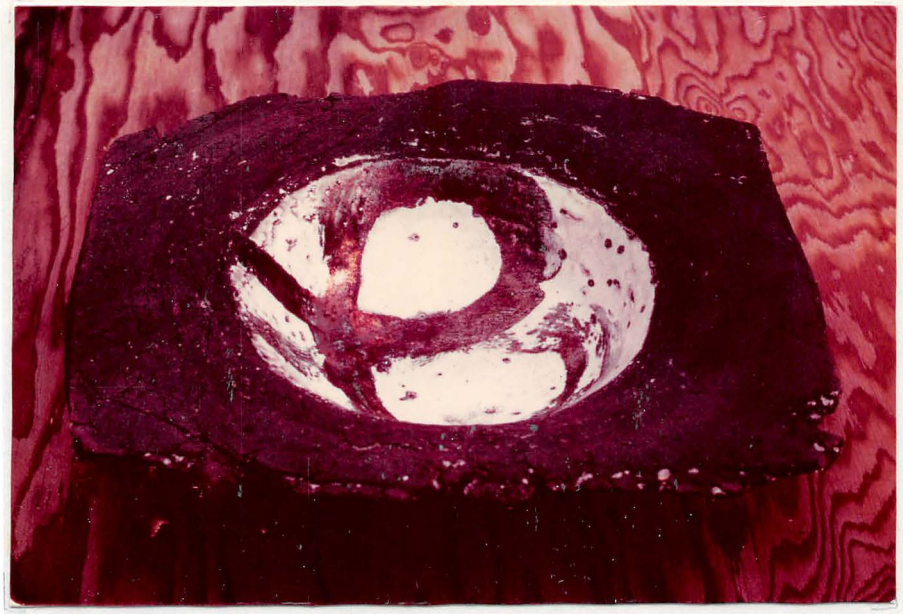
Figure 4. Glaze fire, top loading Raku kiln heated by one bunsen-type burner.

Figure 5. Removal of the ware. Glaze wet and glossy.

Figure 6. Placement of the Raku pot into the reduction container filled with saw dust.

# CONCLUSION

## A FEW EXAMPLES OF MY WORK



Raku bowl, 12 inches in dia.; slab constructed with white glaze applied in center of bowl only. Copper stain decoration brushed over the glaze and fired to about cone 06, reduced in sawdust.

Raku covered jar, 9 inches high; wheel thrown, semi-mat glaze fired to about cone 06, reduced in Elm leaves.

Raku bottles, 20 to 22 inches high; slab base with wheel thrown spout, impressed decoration, glaze over glaze application, fired to about cone 06 and reduced in Elm leaves.

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